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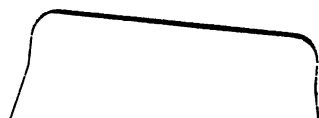
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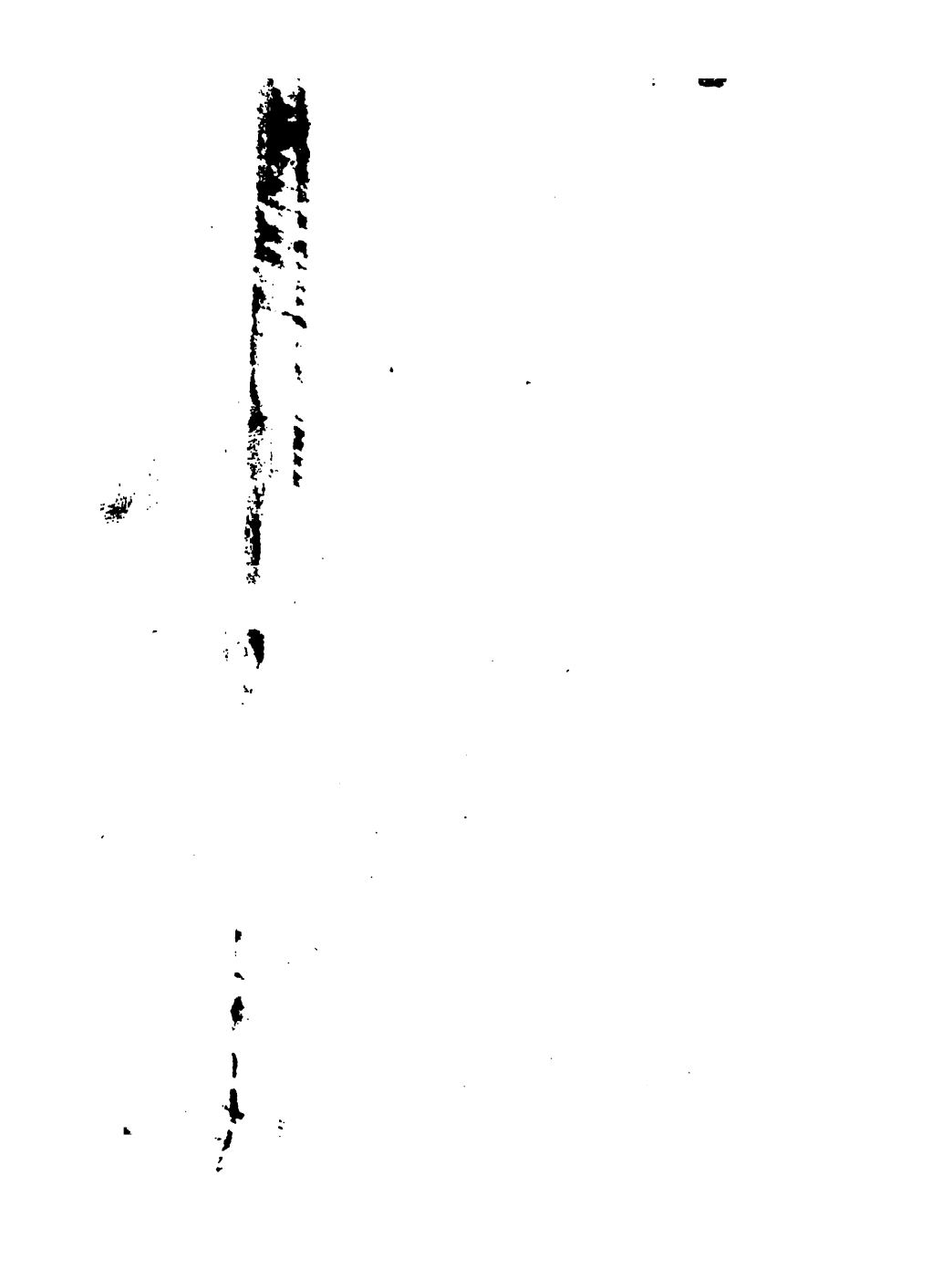
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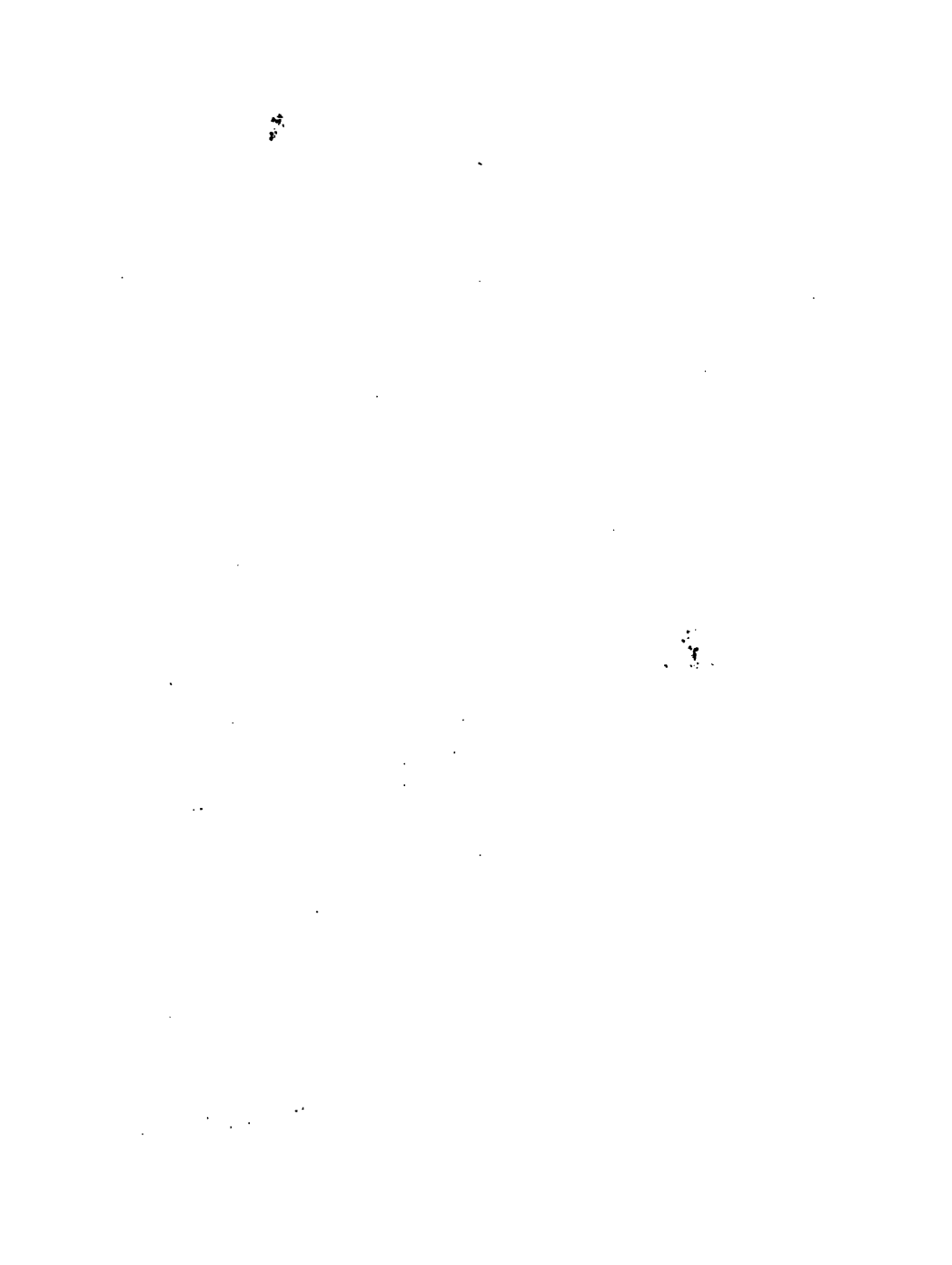
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MY
OWN
GARDEN
BY
MRS. LOUDON.











SPRING FLOWERS.

- | | |
|--------------------|------------------------|
| 1. Snowdrop. | 6. Blue Gentian. |
| 2. Winter Aconite. | 7. Dog's-tooth Violet. |
| 3. Hepatica. | 8. Lesser Daffodil. |
| 4. Polyanthus. | 9. Dwarf Iris. |
| 5. Crocus. | |

My Own

My Own

My Own

My Own

My Own

My Own

My Own

My Own



My Own Garden;

OR,

THE YOUNG GARDENER'S YEAR BOOK.

BY

MRS. LOUDON,

AUTHOR OF

"THE LADIES' COMPANION TO THE FLOWER GARDEN;"

"GARDENING FOR LADIES," ETC.

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THE
YOUNG GARDENER'S YEAR BOOK.

BOOK I.
JANUARY, FEBRUARY, AND MARCH.

CHAPTER I.

CHOOSING THE GROUND; AND SELECTING IMPLEMENTS AND
INSTRUMENTS.

ALMOST all young people are fond of a garden; and as gardening is a fine healthy exercise, it is desirable to encourage a taste for it as much as possible: consequently there are few persons, I believe, who have a family, who, if they have any quantity of garden ground to themselves, do not set aside a small portion of it for their children.

Children, however, are often rather badly dealt with in choosing their gardens ; for the gardener, if it be left to him, very frequently assigns them some portion of ground which, either from the natural poverty of the soil, or the badness of the situation, is unfit for any other purpose. This, however, is not right. Children should have their gardens in an open airy situation, with plenty of light and air ; partly because few plants will grow under the drip of trees, and consequently the difficulty of keeping the garden nice is greatly increased, and partly because it is unhealthy for children to work in a garden in a close damp situation. The garden should also be in good light soil, to lessen the labour of digging.

Philosophers say that there is no pleasure so great as that of conquering difficulties ; but then the difficulties should be such as can be conquered without too great a waste of physical strength, or without bringing on that hopeless despondency which is the consequence of a constant struggle against difficulties which are too great to be surmounted.

Another point to be considered is, to contrive the garden so as to have it contain as many different things as possible. Children like to have their gardens constantly producing something to keep up their interest, and to realize that feeling of ownership so delightful to every one, and particularly so to a child. I once heard a little boy say: "Those lettuces are my own, out of my own garden, and I grew them for mamma," with an expression of intense enjoyment, that I have never forgotten, though many years have since rolled over my head, and the boy has become a man.

The principal implements and utensils that will be required, are a trowel, a spade, a hoe, a rake, a three-pronged fork, a watering-pot, a syringe, hand and bell glasses, and a basket or a wheelbarrow. To these may be added a sponge, for cleaning the leaves or stems of plants, and a hammer. The principal instruments required by the young gardener, are a budding knife and a pair of pruning shears.

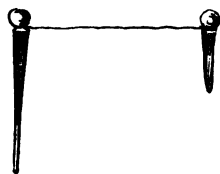
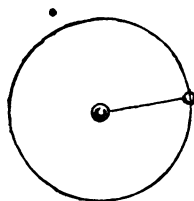
CHAPTER II.

LAYING OUT THE GARDEN.

THE months of January and February count for very little in a garden. It is especially quite impossible for any boy or girl to work in the open air when the ground is hard with frost, as it generally is in the month of January, or covered with snow as it often is in February. Even when the snow melts, the peculiar chill and dampness of a thaw, render a garden a very unfit place for the young or delicate. The gardener's year, then, may be said to begin in March: and in March, supposing a piece of ground to have been selected and the weather to be dry and tolerably fine, it may be laid out as a garden.

The first thing to be done is to have all inequalities levelled, and the piece of ground dug over and raked;

and this, as it is very laborious work, and not very interesting, may be done by the gardener, or a gardening labourer. The next thing is to lay the ground out in beds, which may be either square, round, oval, oblong, octagonal, or in scrolls, and which may be easily made quite exact by a very young gardener, with the aid of

*Fig. 1.**Fig. 2.*

a piece of string half the width of the bed to be laid out, with a peg at each end. (See *Fig. 1.*) When the beds are to be round, the longest peg must be stuck in the centre of the bed, and the other drawn round so that the point of the second peg may mark a circle on the ground. (See *Fig. 2.*) When an oval is to be drawn, two circles must be made intersecting each other, and the dotted lines effaced, as shown in *Fig. 3.* A square requires one peg to be put in the

centre, and with the others the four corners to be marked as shown in *Fig. 4*. An oblong is two squares

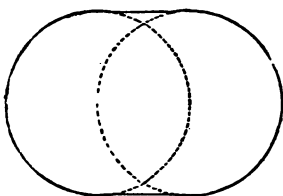


Fig. 3.

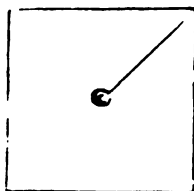


Fig. 4.

with the line between them effaced, as shown in *Fig. 5*. An octagon is simply a square or an oblong with the corners cut off, as shown by the dotted lines in *Fig. 6*. And a scroll may be made with two pieces of string,

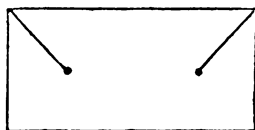


Fig. 5.

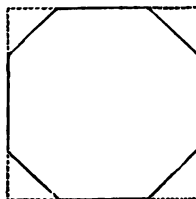


Fig. 6.

one half the length of the other, as shown in *Fig. 7*. A diamond (*Fig. 8*), or a star (*Fig. 9*), may be made in the same manner; and in fact any boy who has

been used to draw figures on a paper kite with a pair of compasses and a ruler, can lay out the beds of a flower garden by simply using a piece of string, with a peg, or a piece of pointed stick, tied to each end, instead of a pair of compasses. It must be observed, however, that simple figures such as circles, ovals, squares, or oblongs, are much easier kept in order than stars or scrolls, or any figure having sharp points. It must

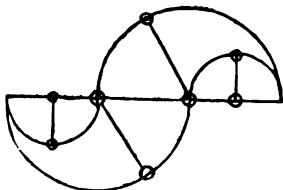


Fig. 7.

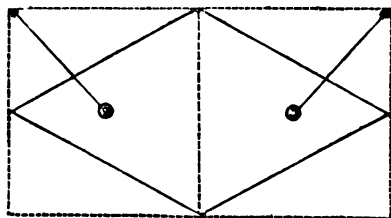


Fig. 8.

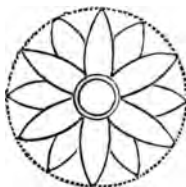


Fig. 9.

also be observed, that fancifully shaped beds are only suitable for flower gardens; and that when lettuces or any other vegetables are grown, the bed should always be either square or oblong to allow of the plants

being sown in drills, that is, in straight lines, for the convenience of being earthed up.

When the shape of the beds has been fixed upon, the next thing is to determine on their mode of arrangement in the garden, as it will not do to have them placed carelessly at uneven distances from the walk or from each other. Supposing the space devoted to the garden to be small, there will probably be room for only one bed in the centre, and that may be a diamond, or an octagon; but supposing the space to be large enough to admit of two or three beds, they must be so arranged as to combine together. As, for example, supposing there are four circles, they should be arranged as in

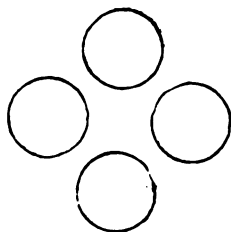


Fig. 10.

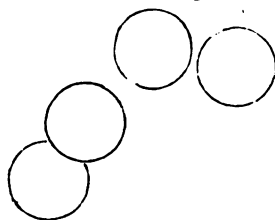


Fig. 11.

Fig. 10, and not made carelessly as in *Fig. 11*. The figure, No. 9, supposing the dotted line to be effaced,

would look very well for the centre of a garden, particularly upon grass, provided the beds were planted with masses of flowers, each bed being planted with one particular kind of flower; or the garden, *Fig. 12*,

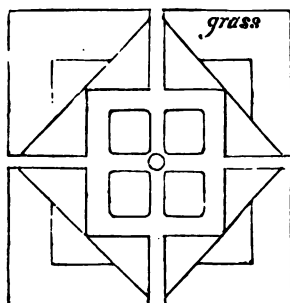


Fig. 12.

may be arranged with a tree rose in the centre bed, and with the walks round and between the four square beds, and those leading into the garden, of gravel: the eight points beyond the gravel walk being grass, and the four other points flowers; or the whole twelve points might be flowers, with a border of grass beyond; taking care that the flowers form masses of different colours, to mark the shape of the beds; and that each bed contains only one kind of flower.

CHAPTER III.

MAKING WALKS.

THE essential points to be attended to in laying out the walks of a garden, are to make them convenient in affording access to the beds, and to have them dry. The first requisite is easily attained in a small garden, but the second, especially if the soil happens to be damp, is not very easy to manage. Should, however, the ground be tolerably dry, and the space allotted to the garden so small that the walks are obliged to be very narrow, the best way to make the walks is merely to tread them very firm, or to beat them as hard as possible with an instrument used for beating turf, made of a heavy piece of wood with a handle, as shown in *Fig. 13*, and then to leave them without either grass or gravel. This is also the best plan when the walks wind very much, as it is very difficult to keep either turf or gravel neat in narrow

winding walks; and when the walks are only trodden or beaten down, they are more easily changed, if it

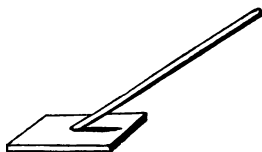


Fig. 13.

should be wished to alter the shape of the beds. Of course, no box edging should be planted when the walks are of this temporary character, but a thick border of Virginian stock, or any low compact growing annual may be sown, which will look very pretty all the summer, and may be easily changed when required. If the walks should be damp, the best way to manage them is to lay them with pebbles, which may be arranged in diamonds and other patterns by choosing pebbles of different colours. When walks are straight and tolerably broad, they may be laid with either gravel or turf; and in the former case, they may be bordered with box. Before laying down the gravel, the walks should be dug a spade deep, and rather large

stones and broken brickbats thrown into the cavity. None of the broken brickbats used should be smaller than a gooseberry, or larger than an apple ; and when a layer of these stones has been formed, another layer of coarse gravel should be spread upon them and beaten down. This should be left to settle for a day or two, and then covered with fine gravel, which should be rolled but not beaten. If the walk is to be bordered with box, it should be planted after the coarse gravel has been thrown in, but before it has been rammed down. A small trench should be made along the side of the walk, and the plants of box having been separated from each other, they should be planted, so as to form a single line all along the length of the walk ; and then the earth pressed down to their roots. Great care should be taken to keep the box edging straight ; and when the edging is finished the tops of the plants must be cut, so as to make them all nearly of the same height. Turf walks do not require any box edging, and the ground will only require to be beaten smooth before the turf is laid down.

CHAPTER IV.

PREPARING THE BEDS FOR SOWING, BY DIGGING, RAKING, AND
MANURING.

HAVING laid out the garden, and made the walks, the next thing to be done is to prepare the beds for the plants ; and to understand what kind of preparation is necessary, we must consider the nature of plants ; and what is required to make them grow.

In the first place, we must remember that all living things, plants as well as animals, must have food ; and that as plants cannot walk about to seek for food when they want it, it must be placed within their reach. The mouths of plants are the tips of their roots and their leaves ; and as they have neither teeth to chew nor stomachs to digest, they must have all their food dissolved in water.

The tips of the roots are called spongioles, or little

sponges, because they consist of a number of pores, like the holes of a sponge, by means of which they take up water wherever they meet with it; and when they are full of water, they contract, and force the liquid they have taken up through the veins of the plant, where it forms what is called the sap. The leaves are also furnished with pores, through which they take the rain water, and the water that is sprinkled over them from a watering-pot.

Water is one of the ingredients of the food of plants, but it is not the only one. They take other things from the air, and from the earth, and from the manure that is given to them. The spongioles of the roots are very tender and easily broken, and they also shrivel up when they are kept too dry; and as a plant cannot take nourishment through any other part of its roots but the spongioles, it is of great importance to keep them entire and in a proper state of moisture. They must not, however, be kept too wet, as when they remain in stagnant water they rot, and, of course become useless.

Everybody must have seen how faded a plant looks when it wants water, but when plants in pots have too much water given to them, and the water is left standing in the saucer, they soon look sickly; and very often the leaves turning yellow fall off and the plant dies, and in that case if the roots are examined it will generally be found that the spongioles have rotted off.

Sometimes worms getting into a pot will kill a plant, and in that case, it will generally be found that the roots have been broken through by the worms. When a worm gets into a pot, it pushes its way through the ball of earth in which the roots are closely matted together, and in so doing it tears the greater part of the tips and spongioles from the rest of the roots, and the plant soon begins to wither for want of food.

Now, as when the ground is very hard and dry, and water can neither penetrate it so as to get to the roots of plants, nor can the roots push through it in search of food for themselves, it is evident that the ground in which plants grow should never be allowed to become very hard and dry, but should be kept in a light

crumbling state, and this can only be done by digging, hoeing, and raking.

The object of digging being to separate the particles of the soil, so as to make it loose and crumbling, it is evident that care must be taken in turning over each spadeful of earth, to break it with the edge of the spade, so as to break the clods if there should be any. Care must also be taken not to trample on the beds, as that would make the ground hard and destroy the use of digging. The great difficulty is to preserve the shape of the beds while digging them; but this can only be conquered by practice, and by patience and perseverance. Patience and perseverance are necessary in most affairs of life; but they are particularly so in gardening, as nature cannot be hurried in her operations. When seeds are put into the ground, they must be left undisturbed, until the young plants begin to grow; and blossoms must have time to ripen into fruit; but this is equally certain, that though patience and perseverance are essential to a gardener, and though nothing can be done without care and labour, yet there is no occupation

in which these qualities are more amply repaid, or in which success is more certain to follow those who have patience to do what is necessary to be done, though it may not appear at first to produce any effect.

If it is necessary to manure the ground, the manure should be put on the beds before they are dug over, so that it may become mixed with the soil in digging; and it must be observed that stable manure should never be used till it is thoroughly decayed. Even when it is to be made into a hot-bed, it requires to be laid in a heap for a long time, and turned over a great many times, so as to let the bad gases escape, which would otherwise burn the plants and turn them quite black. In fact, stable manure should never be used for manuring a garden till it has been previously employed as a hot-bed.

It must be also remembered that there are several kinds of manure, and that different kinds are suitable for different plants. Stable manure is best for roses, *Wistaria sinensis*, vines, and any plants that require a rich strong soil. Cow-manure is generally used for

hyacinth beds. Decayed leaves are good for most plants in pots. Guano is sometimes used in flower-gardens, but the proportion should be only one tablespoonful to a gallon of water, as if it is stronger than this, it will blacken the plants and kill them. It must never be forgotten that plants may be over fed as well as animals, and a coarse-growing weedy plant, all leaves and no flowers, is often as clear an example of over feeding, as a fat asthmatic lap-dog that cannot run without panting for breath.

DESCRIPTION OF PLATE I.

SPRING FLOWERS.

1. SNOWDROP.—The Snowdrop is one of the earliest and most beautiful flowers of spring, and it has received its English name from its frequently appearing rising above the snow when it begins to melt early in February. The common British snow-drop (*Galanthus nivālis*) is found wild in many parts of Great Britain, but of course only in its single state; the double variety being confined to gardens. The botanic name, *galanthus*, signifies literally milk-flower. There are only two species of *galanthus* known; the one figured in our plate, and the Russian snowdrop, which has smaller flowers and a folded leaf. They are both bulbous plants, requiring a light rich soil, thriving under the drip of trees, and increased by offsets which form round the root-plate of the parent bulb.

2. THE WINTER ACONITE.—This pretty little plant has bright yellow flowers like the buttercup and the lesser celan-

dine, but it is easily distinguished from these plants by a circle of green leaves which grow close below the flower, and on which it appears to repose. It has also the peculiarity of appearing to produce only one flower with its circle of leaves, from each plant; as the stems producing the flowers grow each separately out of the ground like distinct plants, though they are in fact, all shoots from a fleshy underground stem. Another peculiarity is, that the flower appears yellow in the bud. The plant is a native of Lombardy; and though it flowers early in February, and sometimes in January, it is often killed entirely by a severe frost or much damp; it should therefore be grown in an open dry situation exposed to the sun. When it is wished to increase or remove it, it should be taken up between June and September, but not sooner or later, and the fleshy stem should be cut with a sharp knife into pieces, having two or three buds in each.

3. HEPATICA.—The common Hepatica is either blue or pink, and both kinds become double by cultivation. The leaves are thick and leathery, and of a dark green; and the flowers, which are numerous, are each borne on a separate stem, rising from the root like the winter aconite. The Hepatica is a native of the north of Italy, and it is found wild in various parts of Europe. It should be planted in peat or sandy soil; and as it has a tendency to push itself out of the ground, the earth should be

drawn up round its roots every autumn early in October, as the plant would be killed if the roots were exposed to the frost. The Hepatica is propagated by dividing the roots, which should be taken up for that purpose any time between June and September. It grows well in pots, and is very suitable for rock-work.

The American Hepatica has a smaller flower than the European kind, but the flowers are pretty, being of a dark purple on the margin, and softening down into white in the centre. This species is very abundant in rocky situations in Canada; but it does not succeed well in British gardens, unless the situation is very open, and the air pure and quite free from smoke.

4. THE POLYANTHUS.—The Polyanthus is a garden variety of the Oxlip, a British flower very nearly allied to the cowslip; and the common kinds are easily grown in any situation where the soil is good, and where they are freely exposed to the sun and air. The finer kinds, which are considered florists' flowers, require a rich stiff soil, and are only valued when the anthers of the stamens completely hide the pistil; as when the stigma projects, which it does occasionally, like the head of a large pin, the flower is called pin-eyed, and is considered worthless. There is a double Polyanthus, but it is also considered of no value by florists.

5. **THE CROCUS.**—There are upwards of a hundred named varieties of *Crocus*; but there are only about thirty distinct species. All the species have bulb-tubers, or corms, which differ from the common bulbs in being solid, and they are propagated by offsets which form round the base of the original tuber. The two kinds which appear earliest in spring, are the Scotch *Crocus*, which is striped white and purple, and the Cloth of Gold, which is orange, with very dark purple stripes. When *Crocuses* are planted they are generally put three inches deep, as they have the habit of pushing themselves out of the ground. On this account also, *Crocuses* should be frequently looked at, and every four or five years they should be taken up and re-planted. The corms are often eaten by mice in dry situations, and destroyed by damp in situations that are not dry, so that they require to be frequently examined. They look best planted in rows, or so as to form patterns of the different colours. In the neighbourhood of London the flowers are often destroyed by the sparrows. *Crocuses* ripen abundance of seed; but seedlings do not flower till the third or fourth year.

6. **BLUE GENTIAN.**—The colour of this flower is the most beautiful and intense blue that can be imagined, if the plant be grown where it has an open situation and an abundance of free air; but the flowers become comparatively pale and dingy, when they are grown in the smoky atmosphere of a town. The

Blue Gentian is frequently used as an edging for beds, as the flowers are large, and, from the shortness of their stems, grow close to the ground. They grow best in peat or sand.

7. DOG'S-TOOTH VIOLET.—This is a pretty bulbous-rooted plant with spotted leaves and purple flowers, but there is an American species that has dark yellow flowers: both kinds grow best in poor sandy soil. There is also a variety of the common species with *white* flowers, but it is rather rare.

8. THE LESSER DAFFODIL.—The genus *Narcissus* is a very extensive one, and most of the kinds are well known, but this plant, which is sometimes called the Little Hoop Petticoat, is somewhat rare. It is a pretty little spring plant, with clear yellow flowers; it is propagated by the offsets that form round the bulb, and which must be taken off with great care, as they are extremely brittle.

9. DWARF IRIS.—This beautiful little plant is quite hardy, and will grow readily in any situation where it can have plenty of sun and air. It looks very well in a bed with the Little Hoop Petticoat *Narcissus*, as they both flower in April; and the purple flowers of the *Iris* contrast well with the yellow of the *Narcissus*.

BOOK II.

APRIL, MAY, AND JUNE

CHAPTER V.

SOWING SEEDS.

THE month of April is generally quite early enough for sowing seeds, though if the weather should be fine the process of sowing may begin in March. When the beds have been dug over they should be raked quite smooth, and this is a much more difficult operation than is generally supposed. As soon as the beds are in a proper state, the mode of planting must be decided upon, and it is generally best to sow the flowers in the beds in the centre of the garden, and the vegetables, if any are grown, in the borders near the fence. Suppos-

ing the plot of ground in the centre to be sufficiently large to allow of four round beds placed as shown in *Fig. 10*, they may be sown with Californian annuals, so as to have a very pretty effect; by putting *Nemóphila insignis*, which is a bright blue, in two of the beds, and *Gilia tricolor* and *Leptosiphon densiflorus* in the other two. When these have done flowering, they may be taken up and their places supplied with dwarf Calceolarias and Tom Thumb geraniums. The border under the fence, supposing nothing but flowers to be grown in the garden, may be sown with dwarf Larkspur, Candy-tuft, and Mignonette, and here and there a little cluster of three or five together of *Convolvulus major*, or *C. minor*, or of sweet peas, trained up ladder-like sticks, so as to look perfectly neat. As soon as it is decided what seeds are to be sown, the ground must be made a little firm by striking it with the back of the spade, and then the seeds may be scattered very sparingly over it, provided it is intended to sow the plants in masses so as to have the beds each covered with plants of one kind. As soon as the seeds are sown, they must be lightly

covered with earth, and again patted down to keep them in their places. Great care should be taken not to cover the seeds too deeply, and the usual rule is for the layer of earth to be of the same thickness as the seed. As, for example, if the seeds are half an inch thick, the layer of earth over them should be half an inch thick. Flower seeds, however, are generally so small that they can hardly be covered too lightly; and, in fact, the only object in covering them at all is to keep them moist, and to exclude the light, which, though it does not prevent vegetation, in some measure impedes it. Seeds should never be sown except when the ground is tolerably moist, as they will not vegetate if they are kept too dry, and if they are watered immediately after sowing, they are washed out of their place.

When flower-seeds are to be sown in the borders, they are generally in round patches, and the ground is either made firm by pressing the saucer of a flower-pot against it, and the seeds are scattered over that, or a ring is made with a pointed stick, and the seeds are

sown within it. In either case care must be taken to sow them as thin as possible, that the young plants may have room to come up.

Supposing the borders to have been set aside for vegetables, the best things for sowing in a small garden are lettuces, radishes, and mustard and cress. The ground designed for these vegetables should have more manure than that intended for flowers, and it should be dug at least eighteen inches deep, especially for radishes, which, if sown in soil that is too shallow, will frequently become deformed. The seed of the radishes is generally scattered all over the part of the beds set aside for them; and the seed should be so scattered as that the plants may be an inch and a half or two inches apart. For a bed two feet three inches long by six feet wide, an ounce of seed will be required, and the plants will come up in eight days. The common and short-topped scarlet are the best kinds of the long radishes, and the rose-coloured is the best of the turnip radishes. Radish seed will keep good for two years.

The best cabbage lettuces are the Marseilles and the

Maltese. Lettuce seed is small and light, and a quarter of an ounce will produce about four hundred plants. The seeds will vegetate in about a fortnight, and as soon as the plants show their third leaf, they should be thinned out, so as to leave them six inches apart. The white Cos lettuce is the best of that kind. Lettuces require a great deal of watering, or they will become tough. In France, lettuces are sown to eat young, as mustard and cress. Lettuces are best sown in lines, as they are more easily thinned out. Mustard and cress, on the contrary, are generally sown broadcast, that is, the seeds are generally scattered all over the bed.

Spinach may also be sown at this season in rows, which should be nine inches apart; and the plants, when two or three inches high, should be thinned out so as to be at least six inches apart.

Peas may also be sown at this season, but they should always be in rows, for the convenience of sticking and earthing them up. Peas have very slight roots, and as they do not take firm hold of the ground, they require to be earthed up to keep them upright. The sticking

is also necessary, as the pea is a climbing plant, and too weak to grow erect without support.

Parsley seed might also be sown at this season, if any were required; and it should be sown in a row, the curled parsley being considered the best. Generally speaking, however, it is not advisable to mix kitchen-garden produce with flowers, as it spoils both; and certainly nothing of a large size, or coarse habit of growth, should be admitted into a child's garden.

CHAPTER VI.

SPRING-TRANSPLANTING, THINNING, AND SHADING.

THE most important kind of transplanting is removing perennial plants, which in April or the beginning of May may be taken up, divided, and replanted. When the plants are dug up, great care should be taken not to injure the spongioles of the roots; but if any of them happen unfortunately to have been bruised, it is better to cut them off than to plant them in an injured state; as when they are cut off, the plant will form fresh ones if a sufficient number be left to keep it in a growing state; but if the plant is put again into the earth with its spongioles injured, it does not produce new ones; and, as the injured spongioles cannot expand and contract so as to take up moisture, and force it upwards through the veins, the plant very soon becomes in

a languid state for want of proper food; and unless it happens to be a very moist season, so as to give it abundant nourishment through the spongioles which remain unhurt and the leaves, the plant will gradually pine away, and die. In dividing the plant, the parts should either be pulled asunder by the hand, or cut carefully with a sharp knife, and all the leaves which have been injured should be cut off.

When hollyhocks are planted, it is necessary to dig a pit about eighteen inches deep, and to fill it nearly full of very rich soil, as they will neither grow nor flower well unless they have plenty of nourishment. It must be observed, however, that hollyhocks do not require dividing. They are biennials, that is, they are raised from seed in a bed, when they grow and form a strong root, but do not flower the first year. They are then transplanted either in the autumn of their first year, or the spring of their second year, into a rich deep soil, where they will grow luxuriantly, and flower early in the autumn.

Another use of transplanting is when the annual

flowers that have been sown come up too thickly, in which case the plants that are to be removed should be taken up very carefully without injuring either the stem or root, and put into holes made first with a pointed stick, the earth being afterwards pressed close to them. As the young plants are very tender and succulent, great care must be taken not to bruise either their stems or roots in this operation.

June is the season for planting greenhouse plants in the beds in the open air, and for this purpose it is usual to make a hole in the bed, and then turning the plant out of the pot with its ball of earth entire, to place it in the space made in the bed to receive it, pressing the earth closely down to the ball. The mode of turning the plant out of the pot is, to place the left hand on the surface of the soil with the neck of the plant between the two middle fingers. The plant is then turned upside down, and the pot taken off with the right hand, the rim of the pot being struck against some hard substance, to loosen the earth, if the pot should not come off easily. The ball of earth containing

the plant will then drop into the left hand, and the potsherds or pieces of broken pots which are at the bottom of the ball, should be picked off before it is put into the hole prepared for it.

The tubers of the Dahlia may be planted in May, and care should be taken, in selecting them, to choose tubers that have good buds, as there are some tubers which look sound and healthy, but which having no buds can never be made to grow. Care must also be taken, in planting the tubers, to place the buds uppermost, covering them two or three inches deep with good soil.

It must be observed that annual flowers should always be thinned when their second or third pair of leaves begin to expand, even if the plants taken up should not be transplanted; as if they are suffered to remain growing too thickly together they will be drawn up, and become too weak to flower well.

If Lettuces were sown the first week in April, they will probably be ready to transplant the first or second week in May. The rule is generally, that plants are ready to remove when the third pair of leaves begin

to open. The first leaves are the seed leaves, which generally either wither up or drop off as soon as the plant has a sufficient root to nourish the plant; then the first permanent leaves open themselves; and when the second pair of these permanent leaves appear, the plant is generally sufficiently advanced for transplanting. When lettuces are transplanted, they are best taken up with a trowel, so that some of the earth in which they are growing may adhere to the root, and the holes in which they are to be put should be made with a trowel likewise. Both the leaves and roots of lettuces are very succulent, and very easily broken or bruised, so that great care will be required in transplanting them. When replanted they should be at least ten inches apart every way.

Peas do not require transplanting, as the seeds are so large that they can be put into the ground at a sufficient distance apart.

All plants immediately after transplanting require to be shaded, as the evaporation from the leaves, if exposed fully to the light, would be greater than the

plant could support in its weakened state. Shading may be done in various ways; the most simple is to turn a flower-pot over the plant, if it should be only a small one; a hand-glass with a mat thrown over it, or even an empty bee-hive or old basket will do; the only points to be attended to are, to keep the plant from direct exposure to the sun, and yet not to crush it or injure it.

CHAPTER VII.

WATERING.

WATERING is a very important operation in gardening, and it is one in which it is particularly necessary to preserve a happy medium. The plants should never be suffered to become so dry as to droop, and yet there should never be so much water as to make the ground look wet and sodden. It is also of very great importance to water them over the leaves, as there are pores in the leaves through which the moisture in the plant evaporates, when they are exposed to the strong action of the sun, but which are capable of absorbing moisture when water is poured upon them. On this account, after dividing and transplanting perennial plants, they should always be watered over the leaves as well as at the roots; but the transplanted annuals are generally too weak to bear much watering, and they

should therefore be planted in moist soil, and only be very slightly sprinkled with water over the leaves.

Lettuces will require a good deal of water after transplanting, and, if the weather should be tolerably dry, the watering should be repeated every day till the plants begin to grow; in fact, they are better if watered every other day during the whole period of their growth. Radishes also require watering occasionally, to make them crisp and succulent.

Annual flowers, on the contrary, when young should not have too much water, as they have generally small roots, and take such feeble hold of the ground, that they are easily washed out of their places; and besides, both the roots and stems are so succulent that they will rot, if they are kept too moist.

The watering-pot used in a flower garden should have a fine rose, and be held high, so that the water may become mixed with air as it descends on the plants. Slightly soapy water is very good for roses and other flowers.

CHAPTER VIII.

MAKING CUTTINGS, PIPINGS, AND LAYERS.

A CUTTING is a branch cut off at a joint; as it is always at the joints where buds are produced, and wherever there are buds the plant will produce new roots if the communication of the sap vessels with the old root is either partly stopped, as in layers, or entirely stopped, as in cuttings, and the joint is buried in the ground and supplied with warmth and moisture. The more warmth the buried joint has, the more readily it will send out roots; and hence, if cuttings are put into a pot, and the pot plunged into a hot-bed, they will strike, that is, produce roots, much sooner than if they are left in the open air. They will even strike sooner if the pot in which they are planted is plunged into the ground, as they will be warmer than if the pot were left with its outer surface exposed to the cold wind.

With regard to moisture, care must be taken not to give too much, lest the end of the cutting should become rotten, in which case the joint will lose the power of producing roots. As each bud is an incipient plant in itself, a cutting might consist of only one bud,—and in fact, gardeners often strike vine cuttings from what they call a single eye, that is, a single bud; but in ordinary cases, and especially where the cuttings are not plunged into a hot-bed, it is safer to have several buds in the cutting. Cuttings of geraniums and other greenhouse plants are generally about four or five inches long. The first thing to be done is to cut them clear at the joint, leaving the end of the joint quite level. The lower leaves are then cut off with a sharp knife (see *a* in *Fig. 14*), great care being taken not to wound the stem; and the end of the plant is buried in the ground, a little hole being made for it with a stick, and the earth being pressed quite close to the cutting, as

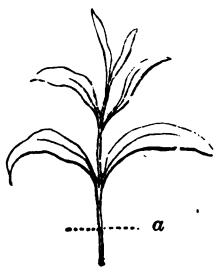


Fig. 14. Cutting of a Lemon-scented Verbena.

if any open space is left round it, or if the bottom of the cutting is left uneven, it is very apt to rot. There should be at least three buds in the part of the cutting left above ground, and it is generally considered advisable to put a bell-glass over it, to prevent the cutting being chilled and dried by the cold wind. Cuttings generally strike best in light soil, and, indeed, the best material for them is white sand, or where this cannot be obtained, peat may be used as a substitute. Cuttings need not be planted more than an inch deep in the ground.

Cuttings of pinks and carnations are generally called pipings, because formerly they used to be separated at the joints by pulling them asunder, and the stem was thus left hollow at the joint, like a pipe. They are now, however, generally separated with a knife like other cuttings.

Layers are made by bending down a young shoot of a plant, and burying it in the earth after having partially divided the joint. (See *Fig. 15.*) The plant is fixed down by a hooked stick, and roots will soon begin to appear from the wounded joint. It must be

observed, that when the joint is only partially cut through, it is always cut on the lower side if it is any kind of herbaceous plant. In some cases the root is not cut through, but it is only twisted, and a portion of the bark taken



Fig. 15.

Layer of a Scarlet Verbena.

off, the object being to check the return of sap from the leaves to the roots, so that it may accumulate at the upper part of the wounded joint, and form there a callosity of granulated matter, from which the roots will soon begin to show themselves. The leaves must always be cut off that part of the layer which is buried in the soil. Roses and various other ornamental shrubs may be easily propagated by layers, as may carnations, pinks, chrysanthemums, and many other plants; but geraniums, petunias, calceolarias, heaths, acacias, and camellias, are generally propagated by cuttings. Verbenas and heliotropes may be propagated equally well by either layers or cuttings.

DESCRIPTION OF PLATE II.

SUMMER FLOWERS.

1. MIGNONETTE.—Everybody knows the Mignonette, but very few persons are aware that in its native country (Barbary), it is a shrub, and not an annual as it is with us. The fact is, it is too tender in its shrubby state, to live through the winter in this country, without the protection of a greenhouse; and as it is found, when raised from seed, to produce flowers and seeds the first year without becoming a shrub at all, it is with us raised every spring, and suffered to die when it has perfected its seeds in the autumn, as it is sure to be killed by the first frost. Mignonette should be sown in a light sandy soil, as when it is grown in a stiff soil it loses its fragrance. It may be sown in any month from March to July, and if the flowers are removed without being suffered to ripen their seeds, the same plants will continue in flower nearly all the summer.

When it is wished to obtain the tree Mignonette, a vigorous plant of the common kind should be chosen from the seedlings



SUMMER FLOWERS

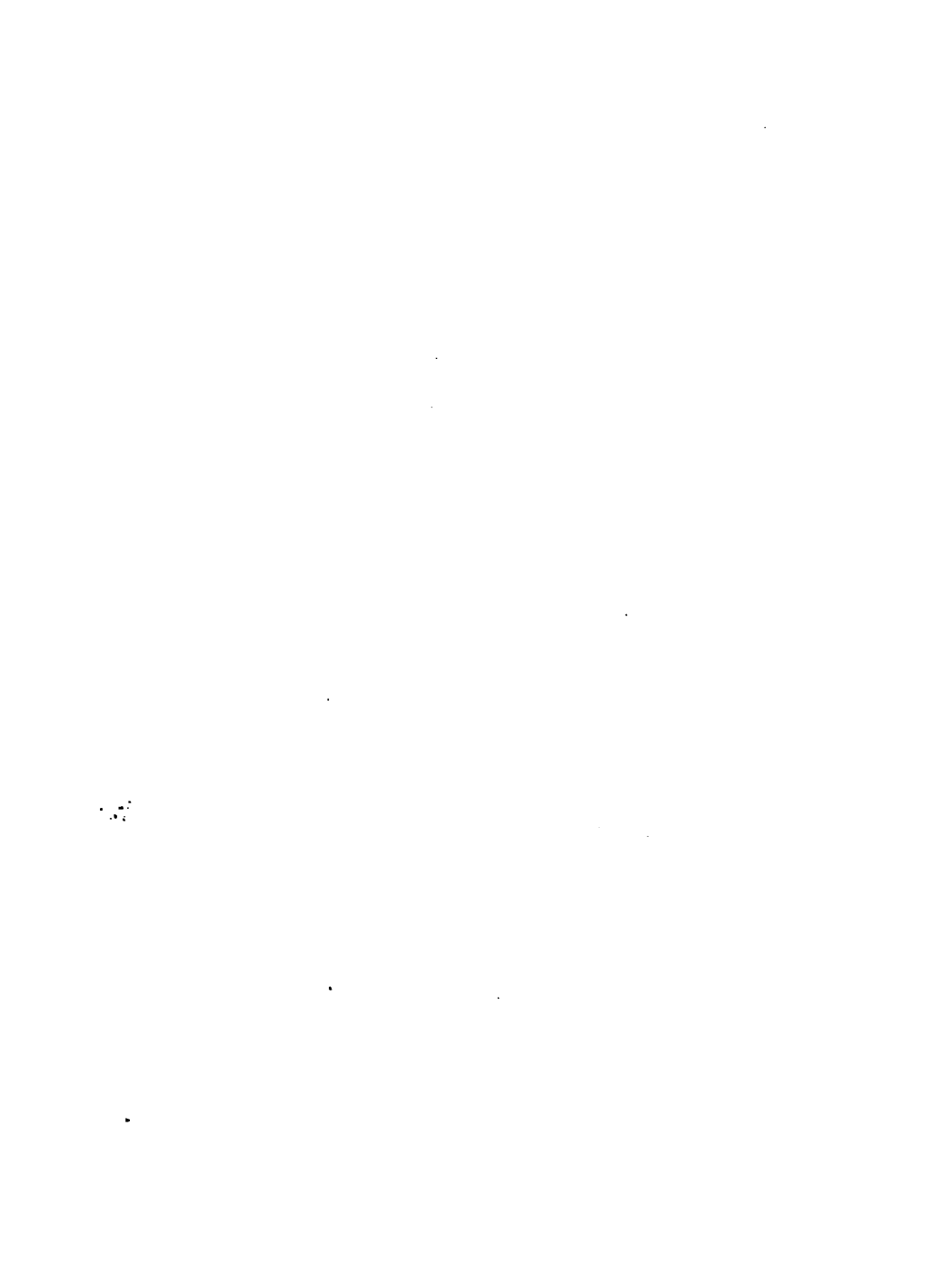
1. Mignonette.
2. American Cowslip.
3. Poppy.
4. Nasturtium.
5. Convolvulus.

6. Phlox.
7. Daisy.
8. The Rose.
9. Morning Glory.



SUMMER FLOWERS.

- | | |
|----------------------|--------------------------|
| 1. Mignonette. | 6. Pinks. |
| 2. American Cowslip. | 7. Dielytra spectabilis, |
| 3. Poppy. | (the Chinese Fumitory.) |
| 4. Nasturtium. | 8. The Rose. |
| 5. Convolvulus. | 9. Martagon Lily. |



sown in April, and put into a pot by itself: all the summer the blossom-buds should be taken off as fast as they appear; and in autumn, the lower side-shoots should be taken off, so as to form the plant into a miniature tree. It should afterwards be transplanted into a larger pot, with fresh soil formed of turf broken into small pieces, and sand. The plant should be kept in a greenhouse or warm room all the winter, and regularly watered every day; and in the spring, the stem will begin to appear woody. The second summer, the same treatment should be observed, and the following spring it will have bark on its trunk and be completely a shrub. It may now be suffered to flower, and its blossoms, which will be delightfully fragrant, will continue to be produced every summer, for a great many years.

2. **AMERICAN COWSLIP.**—This is a very pretty plant, but it is comparatively rare in gardens, as, though it is quite hardy, it is very difficult to keep. The fact is, that in its native country, Virginia, it grows in sandy woods; and it thus requires shade, a sandy soil, and to be kept moist; these are conditions which it is difficult to fulfil in a flower-garden, as very few other flowers will grow in the shade; and where the soil is sandy it is generally dry. In a small garden, however, where every plant can be separately attended to, it is worth the trouble of keeping, as it is very pretty, and flowers abundantly.

3. **THE POPPY.**—The Common Corn Poppy is one of the

most showy of British flowers ; and though it is detested by the farmer, it cannot be denied that it is a great improvement to the appearance of the landscape. When cultivated in gardens, it becomes variegated and double, and is very ornamental. It grows best in chalky soils, and the seeds should be sown in March or April. The poppy is rather a coarse-growing, tall, and widely-spreading plant, and it is, therefore, unsuitable to a very small garden. In some places the seed-vessels are cut off after the flowers have fallen, and dried, as in this state they may be made into a kind of lotion, to lull pain and produce sleep.

4. *NASTURTIUM*.—The annual plants called the Garden Nasturtium are very ornamental, and they are so hardy, and so easily raised, that they are generally found in every flower-garden. It is, however, singular enough, that their name of *Nasturtium* is the botanic name of the cress, to which they bear no botanical affinity, though the leaves and young shoots have very much the same flavour, and are indeed occasionally used in salads on the continent. The seeds of the garden *Nasturtium* when gathered young are also eaten when pickled, and they are used as a substitute for capers.

5. *CONVOLVULUS*.—The beautiful climbing plants known under this name, require a light soil enriched by a compost of decayed leaves and loam. As soon as the young plants begin to grow they should be trained against stakes or trelliswork ;

as their stems are too feeble to support themselves, and they will rot or become distorted if suffered to lie upon the ground. The seed should be sown in April, and is the only means of propagation.

6. PINKS.—It is somewhat singular that the Common Garden Pink has never been found in a wild state, and on this account it is often supposed to be merely a variety of the carnation, which is found growing wild on old walls in various parts of Great Britain. The Common Pink may be grown in any ordinary garden soil, and it may be propagated by dividing the roots, but the finer kinds should be grown in rich loam mixed with decayed leaves, and should be propagated by layers or pipings. The layers are made by cutting a shoot of the plant about half through at a joint, and then burying the wounded part in the earth without detaching it from the parent plant, keeping it in its proper place by a little bit of hooked stick, and leaving the end of the shoot above the ground. The layer should be moderately watered as soon as it is made, and shaded from the sun for a day or two after the operation. When it begins to grow and to have roots of its own, it may be separated from the parent plant. Cuttings of pinks and carnations are called pipings, because these plants have tubular stems, and when separated at a joint, they may be pulled asunder instead of being cut, leaving the separate parts hollow, like little pipes.

They must be struck in sand under a hand-glass fixed very firmly over them, and which must not be removed until they begin to grow.

7. CHINESE FUMITORY (*Dielytra spectabilis*).—This beautiful plant was introduced from China, by Mr. Fortune, in 1846, and he states that the Mandarins in the north of China are so fond of it that it is found in every ornamental garden. It is quite hardy, and is found wild even on the borders of Siberia; the stems, however, generally die down in autumn, and the roots remain in a dormant state till the following spring. It grows and flowers freely in any common garden soil which is open to the sun and yet sheltered from high winds, and it remains a long time in perfection without its beautiful pink and white flowers looking at all faded.

8. THE ROSE.—The Rose is generally called the Queen of Flowers, and certainly the common Provence rose cannot be surpassed for either beauty or sweetness. The tea-scented roses, which are generally of very pale tints of yellow or pink, or nearly white, are also delightfully fragrant; though their odour is quite different from that of the common rose, and they have the disadvantage of being much more tender. All roses require a rich soil, and they should have either manure laid round the roots every autumn, or should be watered with soapy water or something of that kind, to supply them with abundance of food.

Roses are most easily propagated by budding, of the mode of performing which operation full details will be given in the next chapter.

9. THE MARTAGON LILY.—This is a tall hardy plant, very common in flower gardens, which requires no particular care; as, after the bulb is once planted, it will continue to send up fresh shoots every summer. There are several other lilies, that are of easy culture, with very showy flowers, and may be grown in borders, though they are generally too large for the beds of a small garden. The best of these are the common White Lily, the large Orange Lily, and the Japan Lilies, which last are most magnificent plants: they were formerly kept in a greenhouse, but they are now found to flower perfectly well in the open air in the neighbourhood of London. All the lilies should be grown in light sandy soil.

BOOK III.

JULY, AUGUST, AND SEPTEMBER.

CHAPTER IX.

BUDDING.

It has been already stated that every bud is, in fact, a miniature plant, capable not only of producing a stem and leaves, but also roots, if it should be separated from its parent stem and its base buried in the ground. Buds have, however, another power still more extraordinary, and that is, that they can grow and live if taken from the parent stem and inserted in another. This operation, when it is performed by joining the bud, with a piece of wood attached, to another tree, is called grafting; but when the bud has only the bark attached to it, the operation is called budding.

The operation of budding is a very delicate one, and it can only be performed when the sap is thick and glutinous, which it is in summer. Thus the time for budding is only from July to September, and July is generally preferred.

The first thing to be done is to take off a bud with a portion of the bark and wood attached (see *a* in *Fig. 16*), the piece of wood being afterwards separated from the bark, taking care, however, not to injure a little granulated speck, which will be formed just under the bud, which the gardeners call its eye, and without which it would not grow. The bark of the bud must also be cut even at the top (see *b*). The bud being now prepared, a slit is made through the bark of the stock in the shape of the letter T, as shown at *c*. Great care must be taken to cut completely through the bark without wounding the wood, and a small knife is used, called a budding knife, which has a flat thin bone handle, with which the bark of the stock is raised on each side after the cut has been made, so as to allow of the bark of the scion being pushed under it;

care being taken to cut the top of the bark of the bud quite even, so that it may join exactly with that part of the bark of the stock which forms the cross part of the T (see *d*). In France and Belgium, they sometimes cut

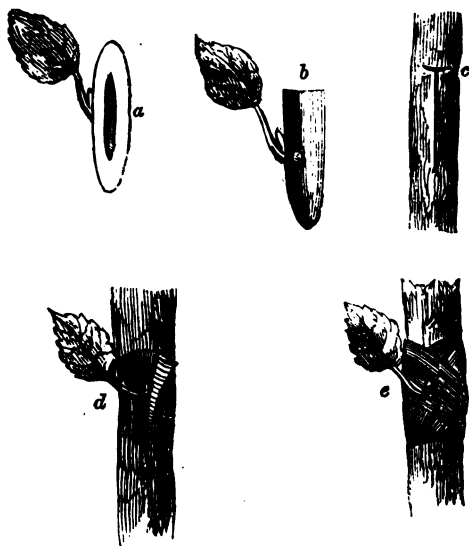


Fig. 16.

the bark of the stock so as to form a reversed L thus; and then of course it must be the lower part of the bud that is cut to fit the cross slit. The bark of the

stock and that of the bud ought to fit exactly where they are joined; as unless they grow together the bud will perish. When the bud is made to fit, a bandage of matting is applied so as to exclude the air from the wounded parts, and to show only the bud and the petiole of the leaf (see *e*). As soon as the bud begins to grow, the petiole of the leaf drops, and when that does so, it is a sign that the bud has taken; and when this is the case the ligature of matting should be loosened so as to allow the bud to swell. When the shoot of the bud has grown to some length the upper part of the stock may be cut off, if it is wished to throw the whole strength of the plant into the bud, but this is not an essential part of the operation. The parts which are essential, are—taking out the splinter of wood cut off with the bud without injuring the eye, and making the bark of the bud adhere closely to the wood of the stock, as if any cavity is left between the bark and the wood, the bud is sure to perish. It must also be observed that budding can only be performed upon plants which bear an affinity to each other. Thus, for example, roses can

only be budded on other roses, or on a wild briar rose out of the hedges; as no art could make a rose grow on a currant or a gooseberry; and though it is often said that a black rose may be produced by budding a rose on a black currant, it is one of those popular errors, which probably originated in a joke, and which are believed because nobody takes the trouble to disprove them.

CHAPTER X.

SUMMER LABOURS.

DURING the summer months of July, August, and September, there is a great deal to be done in a garden to keep it neat, and to have it appear in the greatest perfection. All dead flowers ought to be removed, excepting those that it is wished to keep for seed, and particularly all roses should be cut off as soon as they have done flowering. Untidy growing annual flowers should be cut in and tied up to sticks, and where any culinary vegetables are grown, no dead leaves should be left when they are gathered, and as soon as they are used, the ground should be dug over and neatly raked, so as to be ready for another crop.

Grass plots and grass walks should be mowed, or clipped regularly every fortnight from May to September,

if it is wished to have the grass fine and close. Watering should be attended to regularly night and morning; but the plants should never be watered while the sun is shining upon them; and they should be always watered over the leaves as well as at the roots.

Plants may be turned out of pots into the open ground at any period during the summer months, but the ground should always be previously prepared for their reception, by digging or forking it over, and raking it smooth.

If it is desired to form a small Strawberry bed, it may be done at this season by taking off the runners from the old strawberry plants, and planting them carefully in drills, taking care not to injure the roots.

Evergreens may be transplanted in August and September, such as Rhododendrons and Azaleas, but care must be taken in taking them up not to injure their roots, which are very fine and hair-like, and they should be planted in peat soil mixed with sand. Before the plants are taken out of the ground, holes should be dug ready to receive them, as evergreens should never be

kept out of the ground a moment longer than can be avoided, their roots being so fine and small that they very easily dry up. If possible a day should be chosen when the sun does not shine, and the plants should be well watered as soon as they are put into the ground. When they are taken up, a large ball of earth should be left round the roots. It must be observed that it is only Rhododendrons, the Arbutus, the Holly, the Laurustinus, and the Common and Portugal Laurels, or other similar plants, that will bear transplanting at this season, and not any of the Pine and Fir tribe.

September is a good month for saving seeds, but, in fact, this may be done at any period during the summer when the seeds are ready; and as it is necessary to have them dry before they are put away, a piece of cloth may be provided, which should be bound with a piece of tape, a loop or ring being formed at each corner. Every cloth should have four pins, pointed at the lower end, with a cross piece about the middle to prevent their going too far into the ground; and with either a notch or a hook at the upper end, for the loops of the tape

to be attached to (see *Fig. 17*). The seed vessels when ripe should be gathered, and laid on this cloth in the sun; and when the seed is properly dry, it should be rubbed out of the pods and put into little paper bags, each bag having the name of the seed written upon it.

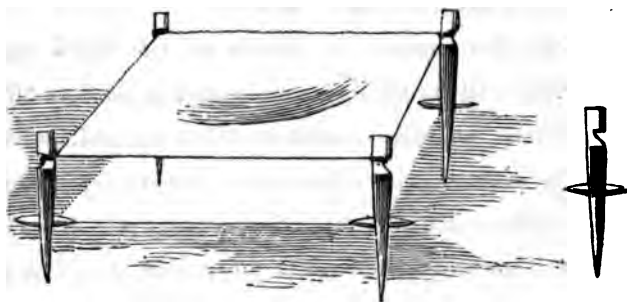


Fig. 17. Cloth for saving seeds.

Insects are often very troublesome at this season, and the leaves of the rose-trees especially will require to be frequently syringed to keep them from the green fly. The eggs of insects should also be sought for and destroyed; and the chrysalides of the Magpie moth, which are often seen at this season, should be picked off and crushed. It is necessary to destroy insects because

they commit such ravages in our gardens; but it is always best to do it when they are in a torpid state, like a chrysalis, as they do not then suffer pain.

The garden generally will require watering and weeding, and if the ground appears hard and dry, it should be forked over and raked.

About this season the leaves of the tulips and hyacinths will be quite decayed; and as soon as this is the case the bulbs should be taken up, and laid in a dry place in the sun. As soon as they are dry enough for the fibrous roots to rub off, they may be put away in paper bags, and kept till October, when they are to be replanted. Other bulbs, such as those of the Gladioli, are best left in the ground, and covered with dead leaves, or mats, to keep them from the frost, as they flower best when suffered to remain in the ground, so as to form a mass of bulbs and roots all growing together.

the $\mathbb{R}^n$ -valued function $\mathbf{f}$ is a solution of the system of differential equations

$$\begin{aligned} \mathbf{f}'(t) &= \mathbf{A}(t)\mathbf{f}(t) + \mathbf{b}(t), \\ \mathbf{f}(t_0) &= \mathbf{f}_0, \end{aligned} \quad (1)$$

where $\mathbf{A}$ is an $n \times n$ matrix-valued function, $\mathbf{b}$ is an n -vector-valued function, t_0 is a real number, and $\mathbf{f}_0$ is an n -vector. The system (1) is called a linear system of ordinary differential equations. The function $\mathbf{f}$ is called a solution of the system (1) if it satisfies the differential equation and the initial condition.



AUTUMN FLOWERS.

- | | |
|----------------------------------|----------------------------|
| 1. <i>Centaurea tinctoria</i> . | 3. Canary-bird Flower. |
| 2. <i>Pentstemon Murryanus</i> . | 4. Crimson Malope. |
| | 5. <i>Daphne odorata</i> . |



scarlet flowers in August and September. It may be grown in any good garden soil, but it is rather tender, and is often broken by a high wind. It is propagated by dividing the roots.

3. THE CANARY-BIRD FLOWER.—This very beautiful little climbing plant was long supposed to be quite tender, and in fact it is easily killed by frost; but when raised as an annual it flowers freely the first year, and grows so rapidly, that, if furnished with proper support, a single plant will grow to an enormous length, and produce hundreds of flowers. It generally does best raised in a hot-bed, the seeds being sown in February. It should be planted out in the open ground in May; it will then begin to flower early in August, and continue to produce a succession of blossoms till it is killed by the frost. It is generally called *Tropæolum Canariense*, in the nurseries, but this is a mistake, as it is not a native of the Canary Islands, but of South America; and it is only called the Canary-bird Flower, from the shape of its flower-buds, which when half expanded resemble a little yellow bird. Its proper botanical name is *Tropæolum peregrinum*, which may be translated, the Wandering Tropæolum; and it is of the same genus as the Garden Nasturtium.

4. CRIMSON MALLOW.—This is a very large and handsome plant, which in a good soil and open situation will grow three or four feet high, bearing abundance of large and showy crimson

flowers; it is a hardy annual, which only requires sowing in April, in an open border, and transplanting when the seedlings are two or three inches high, so that each plant may have plenty of room. When grown in a confined situation, or in a smoky atmosphere, the flowers are small and have very little beauty.

5. *DAPHNE ODORATA*.—This is a very beautiful shrub, with deliciously fragrant flowers, which is generally kept in a greenhouse; but which may be planted in the open air in a sheltered situation, or, at any rate, may be suffered to remain all the summer and autumn in the open ground, so that it is protected from the frost in the winter. It has very much the appearance of the *Mezereum*, to which it is nearly allied, except that its leaves are produced before its flowers.

BOOK IV.

OCTOBER, NOVEMBER, AND DECEMBER.

CHAPTER XI.

PLANTING OF BULBS.

OCTOBER is the usual month for planting bulbs. When a bed is to be formed of Hyacinths, it is usual to dig out a pit at least two feet deep, of the size the bed is to be. At the bottom of this is generally put a layer of rotten cow-dung, and the bed is filled up with a mixture of light loam, coarse river-sand, and leaf-mould. When the bed is formed, a line is stretched across it, and holes made about six inches apart, and about an inch and a half deep; and these are partly filled with pure, white, dry sand, on which the bulb is placed with its point upwards, and covered with a little more sand, over which the earth is raked.

When one line has been planted, the string is removed and stretched across the bed again about six inches further, which is planted in the same manner, and so on till the bed is full; as the hyacinths look much better planted in lines and at regular distances, than they do planted in any other manner.

Beds for Anemones and Ranunculuses are made in the same manner, but the pits need not be above a foot deep, and over the layer of cow-dung, fresh loamy soil should be laid, so as to raise the bed three or four inches above the level of the walk. The tubers should be planted in drills about five inches apart, and care should be taken in planting the Ranunculus tubers that the claws are placed downwards, and none of them broken off, as when any portion of the claws is broken, the tubers are very apt to rot. In planting the Anemones, care should be taken that the bud of the tubers is kept uppermost. The tubers of both Anemones and Ranunculuses should be planted two inches deep, and the beds will require protection during severe weather.

 Crocuses, Snowdrops, and Winter Aconites may also.

be planted at this season. The Crocuses are generally placed in two rows, quite close together, so as to form a double line, or in beds so as to form a kind of pattern with the different colours. The dark purple, the golden yellow, the lilac, and the cream colour, are all in flower at the same time, and look exceedingly well together; but they should never be planted with either the Scotch Crocus, the Cloth of Gold, or any of the early flowering kinds, or the Autumnal Crocus, which should always be planted alone. The early Crocuses, the Snowdrops, and the Winter Aconites, are usually planted in patches of five in each patch, that is, four to form a square, with one in the centre. Sometimes Snowdrops are planted in a double line just inside the box edging.

All other kinds of bulbous plants may be put into the ground at this season, observing that the different kinds of Gladiolus and Ixia should be planted close together, so that their roots may form a mass; and they should never be taken up, unless it is absolutely necessary; as they require to be established in the

ground for two or three years before they come to perfection. The Gladioli grow best in a loamy soil, if it is tolerably light, but the *Ixias* will grow well in peat and sand.

All the kinds of *Narcissus*, and Jonquils, and the Orange, White, and Martagon Lilies, are best planted singly, or at most, three or four together. Tulips are taken up every year when it is wished to grow them in perfection, as it is found that when they are left in the ground, they are very apt to degenerate, and to lose their beautiful markings, becoming of a dull and dingy purplish-crimson. The only exception to this rule is the Yellow Sweet-scented Tulip (*Tulipa sylvestris*), which may be left in the ground for any length of time without injury. Tulip-beds are made in the same way as those for Hyacinths, but they do not require to be so deep. Van Thol Tulips are generally planted in pots, and kept either in a greenhouse or in a room.

Hyacinths are also generally put in glasses at this season.

CHAPTER XII.

SELECTING AND PLANTING ROSES AND OTHER DECIDUOUS SHRUBS.

IN a small garden it is best to have tree-roses, or those which are trained to poles, and called pillar-roses. Climbing roses may also be used for twining over an archway leading into the garden or any similar situation. Dwarf roses may also be grown if there is abundance of room; but generally speaking, they fill up too much space for a small garden.

Tree-roses are of two kinds: standards, which are simply roses budded on briars, three or four feet high; and half standards, which are budded on briars from eighteen inches to two feet and a half high. Pillar-roses may be either budded close to the ground, or grow on their own roots; but climbing and dwarf roses are generally grown from cuttings or layers,

and are then said to be on their own roots. What are called worked dwarfs are budded near the ground.

The Dwarf roses are of several kinds. The principal are the Provence or the Cabbage Roses, the most fragrant and best of which are the old cabbage and the moss. There are, however, many varieties of these, which are varying every year. The Moss-rose, called Rouge du Luxembourg, is a dark crimson, and exceedingly beautiful, but it will only grow in open airy situations. The White Moss is also very difficult to grow well; but the Crested Moss, which is very curious and pretty, is quite hardy, and grows freely.

The French roses are the large flat kinds, and are very frequently variegated with either spots or stripes. They are generally very hardy, and will grow in almost any soil or situation, though, of course, like all other roses, their beauty is greatly improved when they are grown in a good soil, and in an open, airy situation. The French roses form fine half-standards, or they may be grown as dwarfs; their

flowers are generally very large, and their colours brilliant. The most suitable for standards are the Hybrid Provence Roses, which have been raised between the Provence or Cabbage and the French Roses. Some of these are very beautiful, particularly Agnes Sorel, the Duchess d'Angoulême, or the Wax Rose, the White Globe-hip, and Emerance, which last has lemon-coloured flowers. The growth of the Hybrid Provence is less robust than that of the French rose, the wood is less knotty, and the shoots are of a pale green. The flowers are also generally of a light colour, and are remarkably pure and clear in their petals.

The Perpetual roses are exceedingly beautiful and very useful, from the great length of time they continue in flower. Among the most valuable roses of this family may be mentioned the Rose de Roi and its varieties. The Hybrid Perpetuals are considered by Mr. Paul as the most valuable of all roses. They are quite hardy, very sweet, and are suitable alike for standards and dwarfs. One of the most beautiful of them is the Comte de Montalivet.

It is, however, a hybrid tea-scented rose, and consequently it is found to be rather tender. William Jesse is also a very beautiful rose, belonging to this division; and the Duchess of Sutherland is one of the most abundant flowerers. The Hybrid China roses are very much cup-shaped, but they are rather tender as are the tea-scented roses, which are so delightful from their delicious fragrance. The pale yellow rose called Safrano, belongs to this division. The Noisette roses are very hardy; and as their flowers are always produced in clusters, they are in very great abundance. They are almost all suitable for pillar roses. The Ayrshire roses are still more decidedly climbers, and they are also very suitable for pillar-roses. The true Ayrshire are very hardy; but *Rosa Rùga*, which is a hybrid between the Ayrshire and tea-scented, is rather tender. It is, however, an exceedingly beautiful flower, and well worth cultivation. The best yellow rose is *Rosa Harrisdnii*, which looks exceedingly well as a standard. The true China roses and the Banksian roses are rather tender, and do best against a wall.

What are called pillar-roses, are generally very strong, vigorous growing kinds, which have a long pole stuck into the ground near them, up which their strongest shoots are trained, the other shoots being cut off. The best kind of pole is a young larch or spruce fir, from which the branches are cut, so as to leave projections all the way up, as shown in *Fig. 18*.

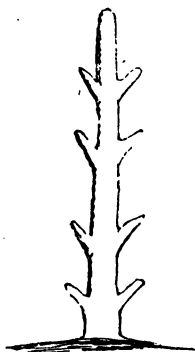


Fig. 18. Young Larch prepared for a Pillar-rose.



Fig. 19. Pillar-rose trained.

Fig. 19 shows a pillar-rose trained. Two strong shoots are generally considered sufficient to train, and the

pillars should never be above four feet high. If the rose is planted in autumn, it is generally not trained to the pillar till the following April, and it will not become in full perfection till the third summer after planting. The branches of a pillar-rose seldom retain their vigour many years, so that it is generally necessary, when the trees are pruned in autumn, to leave one or two strong shoots, to be ready to take the place of those that may die back the following summer. Some of the best pillar-roses are the common Noisette, Brennus, Madame d'Arblay, the Hybrid Bourbon roses, and the Hybrid Perpetuals.

The climbing roses merely require training up the arch or arbour they may be wished to cover. The Ayrshire are perhaps the best, and certainly much the hardiest, of the climbing roses; and a very pretty kind of Ayrshire rose is that called the Lovely Rambler. *Rosa Ruga* is by far the most beautiful; but, as before observed, it is rather tender.

When roses are planted, a pit should be dug for each, about two feet square every way, and filled

with equal parts of very rotten manure or leaf-mould, peat, sand, and loam. When the plants are put into the ground, they should be well watered, but they will not require any after watering, as they will not make any vigorous growth till the following spring.

Deciduous shrubs are those which lose their leaves every winter, and consequently, at this season, that is to say, at the latter end of October, or the beginning of November, they are in a state of complete repose; and they can bear the injury that is done to their roots by taking them up and transplanting them, better than they could at another season when their branches are full of leaves. A plant that is transplanted with its leaves on, looks exactly like a plant dying for want of water, but it cannot be so easily restored, as the drooping of the transplanted plant arises from the loss of a portion of its roots, and it is, of course, of no use to supply it with food when it has lost the mouths through which that food alone could be taken. Hence, when plants are removed with their leaves on, it is necessary to deprive them

and then to loosen the earth within this circle with a fork, so that the roots may be easily detached from the ground. It is a good plan, where practicable, to tie the long fine roots to the stem with matting, to prevent them, as much as possible, from being injured. When the long roots have been thus taken up, the gardener proceeds to dig deeply about two feet from the main stem, so as to undermine the solid piece that is left, with which the plant should be removed if possible. When the plant is brought to the pit and placed in the centre of it, the long roots should be carefully untied and spread out over the surface of the ground, those that are injured being carefully cut off with a sharp knife, and perhaps some of the stronger roots pruned to make them send out fresh fibres in the spring. If there should happen to be two or three layers of roots, which is often the case, the lower layer should be spread out carefully first, and earth crumbled over it before the second layer is spread, and so on till the whole is finished. When the roots are all covered

of a portion of their branches by pruning, and to shade the remainder so that the evaporation from the leaves may not be greater than the mutilated roots may be able to supply; but as this is an operation of great difficulty and danger, it is better to remove the plants when they have no leaves on them. It has been before mentioned, that when roots are bruised, it is better to remove them entirely with a sharp knife, than to plant them in an injured state; and, therefore, the roots should be carefully examined before they are put into the ground, and pruned where necessary. A pit is first formed to be ready for the plant, but it need not be dug so deep for ordinary shrubs as for roses, and generally the common soil of the garden will do. The plant must then be taken up, and if it is very bushy, many gardeners tie its branches in with a strong straw rope, so as to draw them into as small a compass as possible without injuring the plant. In taking up a shrub, it is generally customary to dig round it as many feet from the stem as the plant is feet high,

and then to loosen the earth within this circle with a fork, so that the roots may be easily detached from the ground. It is a good plan, where practicable, to tie the long fine roots to the stem with matting, to prevent them, as much as possible, from being injured. When the long roots have been thus taken up, the gardener proceeds to dig deeply about two feet from the main stem, so as to undermine the solid piece that is left, with which the plant should be removed if possible. When the plant is brought to the pit and placed in the centre of it, the long roots should be carefully untied and spread out over the surface of the ground, those that are injured being carefully cut off with a sharp knife, and perhaps some of the stronger roots pruned to make them send out fresh fibres in the spring. If there should happen to be two or three layers of roots, which is often the case, the lower layer should be spread out carefully first, and earth crumbled over it before the second layer is spread, and so on till the whole is finished. When the roots are all covered

with crumbled soil, the pit should not be filled in till the plant has been watered, and water should be given abundantly, that is, in the proportion of two common-sized watering-pots, to every square yard of ground covered by the roots of the plants. The pit is then covered in level with the soil, taking care that the earth does not rise higher than the collar of the plant, that is, the part where the stem joins to the root. The branches of the tree should then be untied and spread out. Many gardeners are very particular in planting a tree with the same side exposed to the sun as it had in its former situation; as they say, if this is not attended to, the plant loses a portion of its strength in trying to get its branches into the same position with regard to the sun as it was before.

CHAPTER XIII.

PRUNING AND TRAINING.

THE principal object of pruning is to remove the superfluous branches, in order to throw all the strength of the tree into those which are expected to produce either flowers or fruit. A secondary object is, to make the tree well-shaped, and to prevent any branches growing out in an untidy and disfiguring manner. In a small garden, roses are naturally the principal trees that will require pruning, and great care must be taken to perform this operation properly, as upon it the number and beauty of the roses will in a great measure depend.

Roses also require particular attention to be paid to their pruning, as some kinds must be cut in a great deal more than others.

The Provence or Cabbage Roses should have every

shoot shortened to three or four buds, and the Moss Roses and the common White Roses require nearly the same treatment. The French Roses, on the contrary, should have six or eight buds left on the shoots, and the Hybrid Provence and Perpetual Roses should scarcely be cut in at all. The Ayrshire and other Climbing Roses, and the Hybrid Bourbon Roses, should have only the points of the shoots shortened where they have not ripened their wood. The China and the Tea-scented Roses should not be pruned in the autumn,



Fig. 20.
*Pruning
Shears.*

and but very slightly cut early in the spring. It will be much better for young persons always to use a pair of pruning shears (see Fig. 20), as a pruning knife is very difficult to manage, and very dangerous.

In France, where there are probably the best rose gardeners in the world, even professional gardeners always use a kind of pruning shears, which they call *secateur*.

In all cases of pruning, care should be taken to cut the branch obliquely, and not to leave a long piece

above the bud, as shown at *a* in *Fig. 21*. When a piece of wood of this kind is left, it never can heal over, and consequently it decays and injures the tree by retaining water and bringing on the rot. When, on the contrary, the cut is made as at *b*, the wound soon heals over, and the tree is not injured.



Fig. 21. Pruning.

In pruning standard-trees, care should be taken to thin out the branches so as to admit the sun and air to the interior of the tree, to ripen and strengthen the wood, and also to keep the sides of the tree well balanced, in order that the circulation of the sap may be equal throughout. Young trees should not be permitted to bear too many roses, as they will probably not have strength to open them properly, and nothing can be more disfiguring to a rose-tree than roses that have decayed in the bud. All these should be removed as soon as they are decayed; and also all the dead flowers should be cut off unless it should be wished to save the seed-vessels of any of them for the purpose of producing seed.

When rose-trees are trained against a wall, this operation should be performed immediately after pruning ; care should be taken to spread the branches so that they may not cross each other, and so that each may have a due proportion of sun and air, both of which are essential to ripen the wood ; and unless the wood be properly ripened, only a very few flowers, and those of an inferior quality, will be produced the following summer. The operation of training is performed by the aid of nails and shreds of list or cloth, and care should be taken that these shreds are long enough to allow of the nails being driven into them without there being any danger of the hammer bruising the branch. If the shred is put too tightly round the branch, it will stop the circulation of the sap, and if it be too loose, the branch will be blown about by the wind, and probably get bruised against the wall.

CHAPTER XIV.

WINTER LABOURS.

ONE of the most important of these is protecting half-hardy plants from the frost; but it is one that requires very great care, as very often as much mischief is done by damp and want of air, as could have been done by cold. It is therefore essential, that when any straw covering or matting is placed round a tender plant or a bed, that it should be so contrived as to allow it to be opened occasionally so as to admit the air. When a half-hardy plant is protected by a flower-pot being turned over it, the flower-pot should be removed when the sun is shining brightly, in the middle of a fine day, and only put on again when the air begins to get a little cool in the afternoon. Generally speaking, when the sun shines, plants will

always bear to be uncovered in the middle of the day, viz., from twelve till two; but when the plants have any covering that cannot be removed, they must be partially opened for a somewhat longer period, to allow time for the damp air to evaporate. When there is a bed to be protected of ranunculuses or any tender bulbs, the best way of managing, is to have a number of willow hoops stretched all over the bed

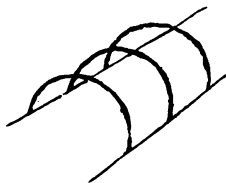


Fig. 22.

*Willow rods bent to make a frame
for a bast-mat.*

at regular intervals, (see *Fig. 22.*) and to cover them with bast-mats. In this case, the mat is made to open at each end, so as to allow a current of air through the bed, to carry off the damp. Hand-glasses, bell-glasses, sea-kale pots, and wooden frames covered with oil-paper, are all used in protecting plants. When any tender shrubs, such as Banksian roses or passion flowers, are trained against a wall, a number of large nails should be driven into the wall at regular distances, and a mat having been prepared

by sewing curtain-rings along the top, the rings should be hung on the nails, and in this manner the plants may be protected without there being any danger of injuring them. Camellias and many half-hardy shrubs may be protected by laying a little straw over the roots, and taking care to cover the collar of the tree. It is said also, that putting a straw rope round the trunk of a tree or shrub, and putting its two ends into a bucket of water, will be efficacious.

This is the season for searching for the eggs of insects, in order to destroy them ; and it is also better to kill snails while they are in a torpid state, as it is probable that they do not then suffer any pain.

All stems of dead plants should be removed and carried away with the dead leaves, which should be carefully swept up into a heap to rot for manure ; and any plants that are not quite hardy, when their long stems are cut down, may have their roots covered with straw, dead leaves, or a little manure.

DESCRIPTION OF PLATE IV.

WINTER FLOWERS.

1. *LAURUSTINUS*.—This beautiful evergreen shrub has been common in British gardens for more than two centuries. It is a native of Spain and Italy, and its blossoms are so hardy, that they expand in the winter when the ground is covered with snow. It is generally propagated by layers, and it will grow in any good garden soil, provided the situation is not too damp; but it must be observed that it is more injured by a damp cold than frost: it very seldom ripens its seeds in this country.

2. *CHRYSANTHEMUM*.—The Chinese Chrysanthemum is one of our most useful garden flowers, as it is hardy, and produces its splendid flowers of so many varying colours at a season when our gardens without it would be quite devoid of floral beauty. Chrysanthemums will grow freely in any light rich garden soil; and they are readily increased by suckers, division of the roots, layers, and cuttings, which last have the advantage of flowering the same year that they are made. The plants ought, however,



WINTER FLOWERS.

- | | |
|--------------------|----------------------|
| 1. Laurus nobilis. | 4. Chimonodoxys. |
| 2. Chrysanthemum. | 5. Chimonodoxys. |
| 3. Arbutus. | 6. Garrya elliptica. |

THE CHINESE EVERGREEN

THE CHINESE EVERGREEN

THE **successful** evergreen has not been introduced to this country. It is more than 50 years since the first Chinese evergreen was introduced to America. It is a small, bushy plant, with small, dark green, glossy leaves, and small, white blossoms. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow.

CHINESE EVERGREEN—The Chinese evergreen is one of the most useful garden flowers, as it is long-lived, and produces flowers of many colors at a season when most flowers are dead. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow. It is a very hardy plant, and will grow in any soil, and in any climate, when the ground is covered with snow.



WINTER FLOWERS.

- | | |
|-------------------|---------------------------|
| 1. Laurustinus. | 4. Christmas Rose. |
| 2. Chrysanthemum. | 5. Chimonanthus fragrans. |
| 3. Arbutus. | 6. Garrya elliptica. |

frequently to be taken up and replanted, as when this is neglected they are apt to grow weak and straggling. Taking off the points of the shoots will make the plants more bushy, but it will lessen the quantity of flowers, as they are always produced from the extremity of the branches, and never from any side-buds. When planted in a sheltered situation, and slightly protected during frosty nights, the plants will continue in flower from the latter end of October till February: but in this case it will be found necessary always to remove the dead flowers as soon as they begin to decay. There are seven quite distinct kinds: the Ranunculus-flowered, the Incurved, the China Aster-flowered, the Clustered, the Tasselled, and the Quilled.

3. ARBUTUS.—This beautiful shrub is equally ornamental when covered with its little bell-shaped flowers, which have been compared to wreaths of fairy lamps, or its strawberry-like fruit. The plant is found wild on the banks of the Lakes of Killarney, but it is most common in the south of Europe. It is quite hardy in British gardens, but it will not grow or flower well, unless the soil is somewhat sandy.

4. CHRISTMAS ROSE.—The Christmas Rose is a name given to a species of Hellebore on account of its producing its large white flowers, which are shaped like a single wild rose, about Christmas: the plant is a hardy perennial, which requires no

particular care, as it will thrive in any common garden soil, and it is propagated by dividing the roots.

5. *CHIMONANTHUS FRAGRANS*.—This plant, which is of comparatively modern introduction, requires to be grown against a wall, as, though the plant is quite hardy, yet from its very fragrant flowers being produced in December, January and February, they are very liable to be injured by cold winds. The shrub itself will thrive in almost any soil, but it prefers a mixture of loam and peat: it is readily increased by layers or cuttings of the young wood.

6. *GARRYA ELLIPTICA*.—This very graceful plant is a native of California, whence it was introduced in 1834. It is remarkable for its long pendulous catkins, which are frequently above a foot long. It is quite hardy, and should be grown in a loamy soil, where it will continue in flower all the winter. It is propagated by layers.

CHAPTER XV.

LISTS OF ANNUALS AND OTHER PLANTS SUITABLE FOR A SMALL GARDEN.

THE following lists comprise dwarf annuals, hardy and half-hardy, suitable for beds; tall annuals, hardy and half-hardy, suitable for borders; and climbing half-hardy annuals and perennials.

LIST OF HARDY DWARF ANNUALS.

<i>Alyssum calycinum</i>		The Sweet Alyssum		White.
<i>Anagallis indica</i>		The Indian Pimpernel		Blue.
<i>carnea</i>		The flesh-coloured Pimpernel		Rose.
<i>latifolia</i>		The broad-leaved Pimpernel		Blue.
<i>Bartonia aurea</i>		The golden Bartonian		Yellow.
<i>Calendula pluvialis</i>		Cape Marigold		{ White & purple.
<i>hybrida</i>		The hybrid Calendula		White.
<i>Callichroa platygloussa</i>		The broad-rayed Callichroa		Yellow.
<i>Calliopsis Drummondii</i>		Drummond's Calliopsis		Yellow.
<i>Campánula Speculum</i>		Venus's Looking-glass		Blue.
<i>pentagonia</i>		The five-angled Bell-flower		Blue.
<i>Centaurea depressa</i>		The dwarf Blue Bottle		Blue.
<i>Cladanthus arabicus</i>		The Arabian Chamomile		Yellow.

<i>Collinsia bicolor</i>	{ The two-coloured-flowered Col- linsia }	Lilac and White.
<i>vérna</i>	The spring-flowering <i>Collinsia</i> .	Blue.
<i>Cynoglossum linifolium</i> .	The flax-leaved Navelwort . .	White.
<i>Omphalodes</i>	Venus's Navelwort	Blue.
<i>Delphinium Ajacis humile</i>	Dwarf Rocket Larkspur . .	{ Various colours.
<i>Eschscholtzia californica</i> .	The Californian Poppy . . .	Yellow.
<i>compacta</i>	{ The compact-growing Esch- scholtzia }	Yellow.
<i>crœcea</i>	{ The saffron-coloured Esch- scholtzia }	Orange.
<i>Eucharidium concinnum</i> .	The neat Eucharidium . . .	Rose.
<i>grandiflorum</i>	The large-flowered Eucharidium	Pink.
<i>Eutoca viscida</i>	The Clammy Eutoca	Blue.
<i>multiflora</i>	The many-flowered Eutoca . .	Lilac.
<i>Wrangeliana</i>	Dr. Wrangel's Eutoca . . .	Lilac.
<i>Gilia tricolor</i>	The three-coloured <i>Gilia</i> . .	{ Lilac and White.
<i>nivalis</i>	The snow-white <i>Gilia</i> . . .	White.
<i>spléndens</i>	The beautiful <i>Gilia</i>	Blue.
<i>Gypsophila elegans</i> . . .	The elegant <i>Gypsophila</i> . .	Rose.
<i>Heliophila araboides</i> . .	The Arabis-like <i>Heliophila</i> .	Lilac.
<i>Iberis umbellata</i>	The purple Candytuft	Purple.
<i>umbellata sanguinea</i> .	The crimson Candytuft . . .	Crimson.
<i>umbellata alba</i>	The white Candytuft	White.
<i>odorata</i>	The scented Candytuft . . .	White.
<i>pinnata</i>	The lilac Candytuft	Lilac.
<i>Kaulfussia amelloides</i> . .	The Amellus-like <i>Kaulfussia</i> .	Blue.
<i>Lasthenia californica</i> . .	The Californian <i>Lasthenia</i> .	Yellow.

<i>Leptosiphon densiflorus</i> . . .	{The clustered-flowered Lepto- siphon}	Lilac.
<i>densiflorus albus</i> . . .	The white-flowered <i>Leptosiphon</i>	White.
<i>Lupinus nanus</i>	The dwarf Lupine	Blue.
<i>Lychnis læta</i>	The dwarf <i>Lychnis</i>	Rose.
<i>Malcolmia maritima</i> . . .	The Virginian Stock	Lilac.
<i>maritima alba</i>	The white Virginian Stock . . .	White.
<i>Nemophila atomaria</i> . . .	The spotted <i>Nemophila</i> . . .	White.
<i>discoidalis</i>	The black <i>Nemophila</i>	Black.
<i>insignis</i>	The showy <i>Nemophila</i>	Blue.
<i>maculata</i>	{The blotched-flowered Nemo- phila}	{White & Violet.
<i>phacelioides</i>	The <i>Phacelia</i> -like <i>Nemophila</i> .	Lilac.
<i>Oxyura chrysanthemoides</i> .	{The <i>Chrysanthemum</i> -like Ox- yura}	{Yellow & White.
<i>Réseda odorata</i>	The <i>Mignonette</i>	Greenish.
<i>Sanvitalia procumbens</i> . .	The trailing <i>Sanvitalia</i>	Yellow.
<i>Schizopetalon Walkeri</i> . .	Walker's <i>Schizopetalon</i>	White.
<i>Silène Arméria</i>	Lobel's Catchfly	Pink.
<i>Sphenogyne speciosa</i> . . .	The showy <i>Sphenogyne</i>	Yellow.
<i>Viscaria oculata</i>	The dark-eyed <i>Viscaria</i>	Pink.

All these are very easily grown, with the exception of *Schizopetalon Walkeri*, which will not flower unless the soil is very light and deep, and will not bear transplanting. All the rest may be sown in March or April, and when they come up may be thinned out and transplanted in May.

DWARF HALF-HARDY ANNUALS.

<i>Brachycome iberidifolia</i> .	{ The Candytuft-leaved-Brachy- come, or Swan River Daisy }	Blue.
<i>iberidifolia albiflora</i> .	The white-flowered Brachycome	White.
<i>Clintonia pulchella</i> . . .	The pretty Clintonia	Blue.
<i>Dianthus Chinensis</i> . . .	The Indian Pink	Pink.
<i>Lobelia gracilis</i>	The slender Lobelia	Blue.
<i>Mesembryanthemum tri-</i> color }	The three-coloured Fig-Mari- gold }	Pink.
<i>crystallinum</i>	The Ice Plant	White.
<i>Phlox Drummondii</i> . . .	Drummond's Phlox	Crimson.
<i>Portulaca splendens</i> . . .	The splendid Portulaca . . .	Scarlet.
<i>Thellusonii</i>	Mr. Thelluson's Portulaca . .	Crimson.
<i>Rhodanthe Manglesii</i> . . .	Capt. Mangles's Rhodanthe .	Rose.

To these may be added the garden Balsams, and the China Asters, of which last there are numerous varieties; the best being those raised from German seeds. All the half-hardy annuals may be sown in pots, in rather rich soil, and the pots plunged up to the rim in a cucumber or melon bed, or in a hotbed made of dead leaves. When the young plants come up, they should be gradually hardened by putting the pots in a greenhouse, or in a room for a few days, that the change may not be too sudden from the hotbed to the open air. If

they are raised in a hotbed made of leaves, and not used for any other purpose, they may be hardened by taking off the glass in the day time, and only putting it on at night. They should not be planted out in the beds till the latter end of May or the beginning of June, and a flowerpot may be turned over them for a day or two, till they have become established in the ground.

HALF-HARDY CLIMBING ANNUALS.

<i>Cobæa scândens</i>	The climbing Cobæa	Purple.
<i>Eccremocarpus scâber</i> . .	The rough Eccremocarpus . .	Orange.
<i>Ipomœa rubro-cœrulea</i> . .	The reddish blue Ipomœa . .	Blue.
<i>Burridgii</i>	Burridge's Ipomœa	Crimson.
<i>Lophospermum scândens</i>	The climbing Lophospermum	Pink.
<i>erubescens</i>	The blushing Lophospermum	Rose.
<i>Hendersoni</i>	Henderson's Lophospermum .	Deeprose.
<i>Maurândya Barclayana</i> . .	Mr. Barclay's Maurandya . .	Blue.
<i>Rhodochiton volubile</i> . .	The twining Rhodochiton . .	{ Dark brownish purple.
<i>Thunbergia alata</i>	The winged Thunbergia . . .	Orange.
<i>alata alba</i>	The white Thunbergia . . .	White.
<i>Tropæolum peregrinum</i> . .	The Canary-bird Flower . .	Yellow.

The climbing plants should be sown in pots, and the pots plunged in a hotbed, in the same manner as directed for the half-hardy dwarf annuals; but when they come up, they will be better transplanted into small pots, three in each, and plunged again into the hotbed, so that they may produce abundance of roots before they are planted out in the beds; and when they are transplanted, the ball of earth containing their roots should be turned out of the pot, and put into the ground without breaking it, so that the roots may not be disturbed. The plants should be tied up as soon as possible, with a strip of bast matting, as any kind of string would bruise their succulent stems; and if their stems are bruised, they will not grow. Great care must also be taken not to break the leading shoot, but if such a misfortune should happen, which it very possibly may, as the stems are very brittle, the broken stem should be cut off with a sharp knife just above the next bud.

LIST OF HARDY TALL ANNUALS.

<i>Amaránthus caudátus</i> . . .	Love-lies-bleeding	Crimson.
<i>caudátus álbus</i> . . .	The white Love-lies-bleeding . . .	Buff.
<i>hypochondriacus</i> . . .	Prince's Feather	Crimson.
<i>hypochondriacus álbus</i>	The white Prince's Feather . . .	Buff.
<i>Anoda Dilleniana</i> . . .	The blotched Anoda	Purple.
<i>Argemòne Mexicana</i> . . .	The prickly Poppy	Yellow.
<i>grandiflora</i>	The large-flowered Prickly Poppy	White.
<i>Borkháusia rubra</i> . . .	The Pink Hawkweed	Pink.
<i>Calandrinia discolor</i> . . .	{The two-coloured-leaved Calan- drinia }	Bright rose.
<i>grandiflora</i>	The large-flowered Calandrinia	Rose.
<i>Calliopsis bicolor</i> . . .	The two-coloured Calliopsis . . .	Yellow.
<i>atrosanguinea</i> . . .	The blood-coloured Calliopsis	{Red, yellow, & brown.
<i>Centaurea cyanus</i> . . .	The Blue Bottle	Blue.
<i>Clárkia pulchélla</i> . . .	The pretty Clarkia	Lilac.
<i>pulchélla álba</i> . . .	The white Clarkia	White.
<i>élégans</i>	The elegant Clarkia	Red.
<i>Chrysánthemum coroná-</i> <i>rium</i> }	The white Chrysanthemum . . .	White.
<i>coronarium luteum</i> . . .	The yellow Chrysanthemum . . .	Yellow.
<i>coronarium tricolor</i> . . .	{The three-coloured Chrysan- themum }	White & yellow.
<i>Convólulus tricolor</i> . . .	The three-coloured Convolvulus	{Blue and white.
<i>tricolor atropurpurea</i>	The dark purple Convolvulus . . .	Purple.
<i>Delphínium consolida</i> . . .	The branching Larkspur	Rose.

<i>Delphinium elatum</i> . . .	The Bee Larkspur	Blue.
<i>Dictamnus Fraxinella</i> . .	The Fraxinella	Rose.
<i>Godetia aurea</i>	The yellow Godetia	Yellow.
<i>rosea alba</i>	The rosy-white Godetia . . .	{ Rose and white.
<i>Romanzovii</i>	Romanzow's Godetia	Purple.
<i>rubicunda</i>	The ruddy Godetia	Lilac.
<i>vinosa</i>	The wine-stained Godetia . .	Red.
<i>Helichrysum bracteatum</i> .	The golden Everlasting . . .	Yellow.
<i>bracteatum album</i> . .	The white Everlasting	White.
<i>macranthum</i>	The large-flowered Everlasting	{ White & rose.
<i>Helianthus annuus flore</i> }	The dwarf double Sunflower .	Yellow.
<i>pleno</i> }		
<i>Hesperis matronalis</i> . . .	The Rocket	Rose.
<i>matronalis alba</i> . . .	The white Rocket	White.
<i>Hibiscus Africanus</i> . . .	The Bladder Ketunia	{ Cream-co- loured.
<i>Lathyrus odoratus</i>	The Sweet Pea	{ Various colours.
<i>Linum grandiflorum</i> . . .	The large-flowered Flax . . .	Blue.
<i>Lupinus mutabilis</i> Cruck- }	Cruckshanks' Lupine	Blue.
<i>shanksii</i> }		
<i>Madaria elegans</i>	The elegant Madaria	Yellow.
<i>Malope trifida</i>	The three-cleft-leaved Malope	Crimson.
<i>Nolana atriplicifolia</i> . . .	The Atriplex-leaved Nolana .	Blue.
<i>Oenothera grandiflora</i> . .	{ The large-flowered Evening	Yellow.
	Primrose }	
<i>tetraptera</i>	{ The four-angled Evening Prim- }	White.
	rose }	

<i>Papaver coccineum</i> . . .	The Carnation Poppy . . .	Scarlet.
<i>Schizanthus pinnatus</i> . .	The pinnate-leaved Schizanthus	Lilac.
<i>Senecio elegans</i>	The purple Jacobæa	Purple.
<i>Tropæolum majus</i> . . .	The tall Nasturtium	{ Yellow & red.
<i>Xeranthemum annuum</i> .	The lilac Everlasting. . . .	Lilac.
<i>annuum album</i> . . .	The white Xeranthemum . . .	White.

To these may be added the various kinds of *Petunia* and *Zinna*, all of which require to be raised on a hotbed, as does the Ten-week Stock. The Purple Jacobæa should also be raised in the same manner.

LIST OF PERENNIALS.

<i>Althæa rosea</i>	The Hollyhock	{ Various colours.
<i>Alýssum saxatile</i> . . .	The Madwort	Yellow.
<i>Anemone apennina</i> . . .	The Alpine Anemone. . . .	Blue.
<i>vitifolia</i>	The vine-leaved Anemone . .	White.
<i>japonica</i>	The Japan Anemone	Rose.
<i>Anchusa itálica</i>	The Italian Bugloss	Blue.
<i>Antirrhinum coccineum</i> .	The scarlet Snapdragon . . .	Scarlet.
<i>caryophylloides</i> . . .	The striped Snapdragon. . .	{ White & red.

<i>Arabis alpina</i>	The Alpine Wall Cress	White.	
<i>Aquilegia glandulosa</i>	The glandulous Columbine	Blue.	
<i>Skinneri</i>	Skinner's Columbine	Red.	
<i>vulgaris</i>	The common Columbine	{ Various colours.	
<i>Campánula médium</i>	The Canterbury Bell	Blue.	
<i>médium flore albo</i>	{ The white-flowered Canterbury Bell }	White.	
<i>Catanánche cærúlea</i>	{ The Blue Catananche, or Lion's Foot }	Blue.	
<i>Cheiránthus Cheiri</i>	The Wallflower	{ Various colours.	
<i>Commelina cœlestis</i>	The Blue Commelina	Blue.	
<i>Crucianella stylôsa</i>	The long-styled Crucianella	Rose.	
<i>Gaillardia bicolor</i>	The two-coloured Gaillardia	Orange.	
<i>Gentiana acaulis</i>	The stemless Gentian	Blue.	
<i>Geum sanguineum</i>	The blood-red Avens	Crimson.	
Hollyhock. (See <i>Althæa</i> .)			
<i>Láthyris latifolius</i>	The Everlasting Pea	Pink.	
<i>Lupinus polyphýllus</i>	The many-leaved Lupine	{ Blue and white.	
<i>Lýchnis chalcédónica</i>	The scarlet Lychnis	Scarlet.	
<i>Matthiola simplicicaulis</i> } <i>coccinea</i> }	The scarlet Brompton Stock		Purple.
<i>Mimulus rôseus</i>	The rose-coloured Monkeyflower	Rose.	
<i>moschatus</i>	The Musk Plant	Yellow.	
<i>Papáver bracteatum</i>	The bracted Poppy	Crimson.	
<i>Pentstemon rôseus</i>	The rose-coloured Pentstemon	Rose.	
<i>Primula vulgaris caulé-</i> } <i>scens</i> }	The Polyanthus		{ Various colours.

<i>Primula vèris</i>	The Cowslip.	Yellow.
<i>Scabiòsa atropurpùrea</i> . .	The dark purple Scabious . .	{ Brown & purple.
<i>Stipa pinnàta</i>	The Feather Grass.	

The *Commelina cœléstis*, *Gaillardia bicolor*, *Mimulus røseus*, and *M. moschàtus*, will require protection during the winter.

To these may be added various kinds of Pinks and Carnations, particularly the Anna Boleyn Pink; and various kinds of Sweet Williams, flag flowers, Irises, Lilies, Narcissus, and Jonquils, and many others that are to be found in almost every garden.

CALENDARIAL SUMMARY OF OPERATIONS.

JANUARY AND FEBRUARY.

SCARCELY any work can be done in the garden, as the ground is generally hard with frost or covered with snow. The eggs of insects, however, and insects themselves in a torpid state, may be sought for and destroyed. Any plants that are covered up to protect them from the frost should be frequently looked at, and air given to them in the middle of every fine day to save them from the damp, taking care, however, to close up the covering as soon as the sun goes in, and indeed never to give air for more than two hours at a time.

MARCH.

Dig, rake, and manure the ground; lay out beds; make walks; lay down turf; plant box; and towards the end of the month begin to sow seeds.

APRIL.

Finish sowing seeds.

MAY.

Transplant hardy annuals from the seed beds, where they are too thick; plant and divide perennials; begin to plant dahlias, the planting of which should be finished in June.

JUNE.

Plant out tender annuals and greenhouse plants; water regularly; mow or clip grass every fortnight; make cuttings, pipings, and layers.

JULY.

Bud roses; continue watering and mowing; trim and tie up annual flowers.

AUGUST AND SEPTEMBER.

Remove the annuals that have done flowering, and gather the seed; cut off the dead roses, and remove the seed-vessels of rhododendrons and other flowering shrubs.

OCTOBER.

Plant bulbs and tubers; put hyacinths in glasses; plant roses and other ornamental shrubs; prune roses, and train the tender kinds against a wall.

NOVEMBER AND DECEMBER.

Protect half-hardy plants; search for the eggs of insects, and for insects themselves in a torpid state.

THE END.

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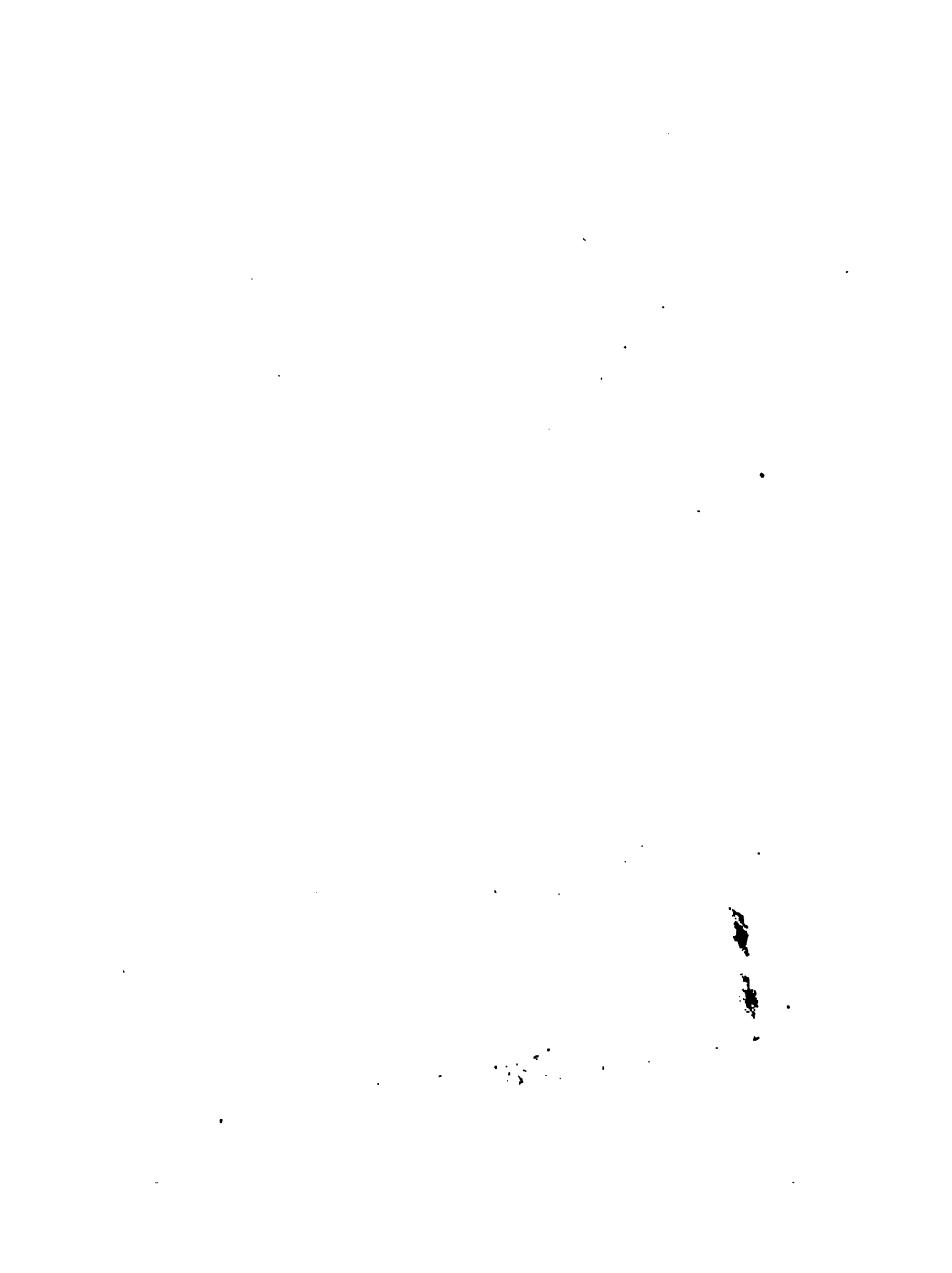
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